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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,198	04/25/2002	Silvano Pupolin	METR0400US	6467

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LEVINE & MANDELBAUM
444 MADISON AVENUE
35TH FLOOR
NEW YORK, NY 10022

EXAMINER

ABRAHAM, ESAW T

ART UNIT PAPER NUMBER

2133

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/048,198

Applicant(s)

PUPOLIN ET AL.

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-9 are presented for examination.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119 (a)-(d). The certified copy has been filed in parent Application No: M199A001711 filed on 07/30/1999.

Drawings

3. The drawings are objected to because figure 1 should be designated by a legend such as – **prior art** - in order to clarify what is applicant's invention.

Specification

4. Please define the term 'GSM' in the content of the disclosure (see page 1, line 8) and in the title. For example; add "European Global System" before the term "GMS"

Correction is required.

Arrangement of the Specification

5. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

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- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim objections

6. The claims 1-9 are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 1 is rejected under 35 U.S.C. 101 because the method for decoding with error correction of cyclic code signal $r(x)$ containing a first and second error burst shorter, calculating for the signal $r(x)$ the corresponding syndrome $S(x)$ and seeking the sequence of the syndrome $S(x)$ and if an erroneous is traced correcting the secondary burst therein performing the

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correction step on the first error burst is only directed to computational algorithm which is not connected to a machine-readable medium.

Claims 2-6, which are dependents of claim 1 are also rejected under 35 U.S.C. 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere CO.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Ramesh et al. (U.S. PN: 5,936,978).

As per claims 1, the applicant's admitted prior art, figure 1 or flow chart teaches an error correction method with fire code comprising a bit sequence making up a code word received in (10), a rotated syndrome calculated and verified in (12) and if there are no errors in the received sequence, the correction procedure terminates correctly on (13) and if there are errors, it is

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verified on (14). Further the applicant's figure 1 teaches if first 28 bits are zero bits, the errors are correctable and are corrected by the primary burst correction (16) and terminates on (17) and if the first 28 bits of the syndrome are not all zeroes block (25) calculates the rotated syndromes to verify whether it is possible to find a rotated syndrome having 28 zero bits (see applicant's admitted prior art page 6 and 7). The applicants admitted prior art **does not explicitly teach** calculating syndromes of a predetermined number of syndromes generable in an error burst and if an error is traced correcting the secondary burst of the pattern. **However**, Ramesh et al. in an analogous art teach an error trapping decoder performing a received shortened codeword in a decode shift register (see abstract) and further Ramish et al. in figure 3 step (116) teach if correctable error pattern is exist (yes), it isolate errors and add $r(x)$ (118) starting from bit location and send correct message to destination (112) if pattern does not exist (no) it will shift syndrome register and return to step (116) which Ramish et al. is basically teaching the same method as the applicant's invention. Therefore, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made follow the method steps of Ramish's flow chart for correcting syndromes. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to heighten the decoding efficiency and increase the flexibility of configuration.

As per claims **2 and 8**, the applicant's admitted prior art in view of Ramish et al. teach all the subject matter claimed in claim 1 including Ramish et al. in figure 3 teach steps ((116-130 and back to 116) or steps (116-128 and back to 116)) to performs a rotated syndrome.

As per claims **3 and 9**, the applicant's admitted prior art in view of Ramish et al. teach all the subject matter claimed in claim 1 including Ramish et al. in figure 3 step 126 teach a shift

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syndrome registers towards LSB, and add to pre-computed and stored version (syndrome information).

As per claim 4, the applicant's admitted prior art in view of Ramish et al. teach all the subject matter claimed in claim 1 including Ramish et al. teach an error trapping decoder that performs right cyclic shifts of a received shortened codeword in a decode shift register (see col. 4, lines 38-47).

As per claim 5 and 6, the applicant's admitted prior art in view of Ramish et al. teach all the subject matter claimed in claim 1 including the applicant's admitted prior art in figure 1 teaches a fire code a shortened fire code (224, 184) (see element 10).

As per claim 7, the applicant's admitted prior art in view of Ramish et al. teach all the subject matter claimed in claim 1 including Ramish et al. in figure 2 teach a decoder (10) is shown that includes a code shift register (12), an input of register (12) is connected to an output of the front end of a decoder receiver (not explicitly shown) and the bits of the received codeword, $r(X)$, are right-shifted into code shift register (12) and further a plurality of the right-most bit locations of register (12) are connected by data lines (13) to a burst detection and correction circuit (14) and furthermore upon determining the length of an error burst (from burst detection circuit 16 described below) in the received word, at adder (26), burst correction circuit (14) adds the error burst bits to the received word bits in code shift register (12) and the received word bits plus the burst correction bits are shifted to the right and out of code shift register 12 via adder 26, thereby passing an error corrected word to the next stage in the receiver. Ramish et al. further teach loading said cyclic codeword into a first storage location; computing a syndrome of said cyclic codeword; loading said syndrome into a second storage location; determining if a

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least significant bit of said syndrome is equal to a predetermined value; shifting contents of said second storage location towards said least significant bit, if said least significant bit is not equal to said predetermined value (see claim 1).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 4,698,813 Erdel

US PN: 3,568,148 George C. Clark

US PN: 5,657,331 Metzner et al.

10. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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Esaw Abraham
Esaw Abraham

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APERT/RECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1100